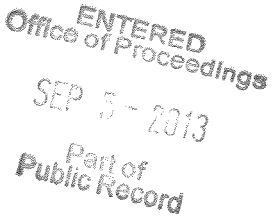
PUBLIC VERSION

234764

BEFORE THE
SURFACE TRANSPORTATION BOARD

REVIEW OF THE GENERAL PURPOSE COSTING SYSTEM	)))))	Docket No. EP 431 (Sub-No. 4)

REPLY COMMENTS OF THE WESTE N COAL TRAFFIC LEAGUE



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Dated: September 5, 2013

BEFORE THE
SURFACE TRANSPORTATION BOARD

REVIEW OF THE GENERAL PURPOSE COSTING SYSTEM	)	Docket No. EP 431 (Sub-No. 4)

The Western Coal Traffic League ("WCTL") submits this Reply addressing opening comments submitted in this proceeding.[1]

SUMMARY

The Board's stated purpose in this proceeding is to modify its Uniform Railroad Costing System ("URCS") to produce more accurate costs. WCTL agrees that the Board's costing procedures should produce accurate costs. In order to achieve this objective, the Board must fully capture the efficiencies inherent in the unit train transportation of western coal.

WCTL has long advocated that the best way to capture unit train cost efficiencies is to make movement-specific adjustments to URCS system-average costs.

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[1] *See* Comments of the Western Coal Traffic League ("WCTL Comments"); Comments of the Association of American Railroads ("AAR Comments"); Comments of Union Pacific Railroad Company ("UP Comments"); Comments of BNSF Railway Company ("BNSF Comments"); Joint Comments of the American Chemistry Council, the Chlorine Institute, the Fertilizer Institute, and the National Industrial Transportation League ("ACC Comments"); Opening Comments of the Alliance For Rail Competition, et al., ("ARC Comments"); Verified Statement of Tom O'Connor and John Legieza, Tom O'Connor Group, LLC; Comments of Arkansas Electric Cooperative Corporation ("AECC Comments"); Comments of Samuel J. Nasca, for and on behalf of the United Transportation Union-New York State Legislative Board.

However, that is not the approach the Board has chosen to take in this proceeding, so WCTL limited its Comments to addressing the proposals the Board has put forward.

As discussed in its Comments, WCTL generally has no theoretical objections to most of the Board's proposals. However, it is unclear to WCTL exactly how the proposals will be applied, and whether they will achieve their intended objectives because the Board's Notice[2] does not provide a detailed step-by-step explanation on how the proposals will be implemented in URCS, nor has the Board conducted any new supporting cost studies based on actual traffic and operating data.

WCTL continues to strongly object to the Board's proposal to eliminate the use of the 2.0 empty-loaded ("E/L") ratio when costing dedicated unit train moves. The Board's proposal to base these E/L ratios on system-average empty and loaded car miles by car type is fundamentally flawed because the reported car type data does not distinguish between the type of service the car is used to provide (*i.e.*, single car, multiple car or unit train).

Western coal moves in dedicated unit trains that cycle between origin and destination. Retention of the 2.0 E/L ratio – which is based on how western unit coal trains actually operate – is far more accurate than the Board's proposed approach. WCTL also continues to urge the Board not to eliminate appropriate switching-related efficiency adjustments when calculating the equipment costs for the use of railroad-owned equipment.

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[2] *Review of the General Purpose Costing System*, Docket No. EP 431 (Sub No. 4) (STB served Feb. 4, 2013) ("Notice").

In addition, WCTL requests that the Board reject alternative proposals put forward by the AAR and UP to calculate switching costs. These convoluted procedures produce absurd results when applied to unit train movements.

REPLY

A. Elimination of the Make-Whole Adjustment

In its Comments, WCTL stated it had no objection to the Board's proposed elimination of most make-whole adjustments provided that the Board replaces the adjustments with costing procedures that properly account for unit train cost efficiencies. WCTL Comments at 5. Other parties stated that they had no objection to the Board's replacement of make-whole adjustments, provided the adjustments are replaced with costing procedures favored by the party.[3] All commenters agreed with WCTL that the Board's URCS costs should properly reflect unit train efficiencies.[4]

B. Calculating Phase II SEM Costs on a Per-Shipment Basis

In its Notice, the Board proposed to modify its Phase II URCS calculation of switch engine minutes ("SEM") unit costs by developing these costs on a per shipment basis, as opposed to the current development of these costs on a per car basis. According

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[3] *See* AAR Comments at 10-13; UP Comments at 3-4; BNSF Comments at 5-7.

[4] *See, e.g.*, AAR Comments at 10 ("the agency has long recognized that the efficiencies of higher volume shipments lead to lower unit costs per unit than unit costs for lower volume shipments") (footnote omitted); AECC Comments at 3 ("[e]conometric studies have confirmed that unit trains achieve very substantial efficiencies compared to way/through trains") (footnote omitted).

to the Board, this change should "better reflect actual operating costs" and "properly reflect[] economies of scale":

> Operationally, a shipment of rail cars is generally connected to a contiguous block of cars prior to loading, and is handled as a contiguous block from origin to destination. As such, the costs to switch a shipment of a four-car block should be the same as the costs to switch a shipment of an eight-car block. For this reason, the costs for each type of SEM switching are better accounted for on a per-shipment basis rather than a per-car basis. This change would not only better reflect actual operating costs, but the per-car cost of switching would drop as shipment size increases, thus properly reflecting economies of scale. As a result, URCS would no longer need to make a separate make-whole adjustment because the operating efficiencies of larger shipments would already be reflected in the unit costs.

Notice at 5.

In its Comments, WCTL agreed with the Board that there are economies of scale associated with rail switching, and that in the absence of a make-whole adjustment, these economies of scale could be captured, in part, on a per-shipment basis in Phase II. *Id.* at 7. WCTL concluded that in the absence of actual data, and subject to a review of the Board's actual implementation procedures, WCTL had no objection on a theoretical basis to the Board's calculation of Phase II switching costs on a per-shipment basis.

Most commenters agreed with the Board that there are economies of scale associated with rail car switching, but took issue with Board's proposal:

- **Asserted Logical Flaws.** Several commenters argued that the Board's proposal was flawed because it errantly assumed that switching costs are the

same regardless of the size of the shipment.[5] None of these commenters present any empirical data to support their assertions. Instead, they simply make hypothetical assertions such as: "[s]witching a block of 40 cars will result in higher costs than switching a block of two cars";[6] and "the costs to switch an entire unit train are [higher than] those to switch a single car."[7]

However, commenters cannot prove their points using hypotheticals. Switching a single block of 40 cars a few hundred feet can be far less costly than switching a single block of 2 cars several miles. Similarly, URCS assumes that unit coal trains are switched at origin and destination even though in many cases no switching occurs at all since the train moves as a single unit over the origin and destination loop tracks.[8] In these cases, the cost to "switch" an entire unit train is less than the cost to switch a single car.

The problem with commenters' hypotheticals is that URCS calculates system average costs, and for any individual movement, the actual switching costs could be higher or lower. It is easy to make hypotheticals to show under- or over- recovery of costs because the answers turn on the hypothetical inputs used. The commenters'

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[5] *See, e.g.*, AAR Comments at 15; UP Comments at 4.

[6] AAR Comments at 16.

[7] UP Comments at 4-5.

[8] UP claims that substantial switching takes place at destination on western coal unit train movements, citing two STB coal rate decisions involving atypical power plants without destination loop tracks. UP Comments at 5 n.4. As discussed in Attachment 1, most western coal rate decisions have involved typical western coal-fired power plants that do have destination loop tracks.

hypotheticals do not undercut the Board's basic premise: developing switching costs on a per shipment basis captures economies of scale which are not captured under current Board costing procedures.

- **AAR Alternative.** The AAR proposes an alternative which "assigns 70 percent of the switching costs on a shipment basis and 30 percent on a car basis." AAR Comments at 16. According to AAR, this approach "will preserve the intent of the current URCS switch cost allocation process, which itself was based on special studies." *Id.* As explained in detail in Attachment 2 to these Reply Comments, AAR's convoluted proposal produces the exact opposite results.

Under current URCS procedures, terminal switching costs per car on unit train movements equal 25% of unadjusted system average terminal switching costs per car. The 25% figure is predicated on special studies performed by the Board's predecessor in the early 1970's.[9] Under AAR's proposal, terminal costs on unit train movements are increased to over 30% of unadjusted system average terminal costs per car.

This is an absurd result. In the early 1970's, the Board's predecessor found that terminal switching activity for unit trains was four times as efficient (and one quarter as costly) as terminal switching for the average car. Since that time, unit trains have become longer and loop tracks at mines and destinations have become commonplace.

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[9] *See Investigation of R.R. Freight Rate Structure Coal*, 345 I.C.C. 71, 227-28 (1974).

Nevertheless, the AAR proposal is predicated on the assumption that terminal operations for unit trains have become relatively less efficient than they were in the early 1970's. That's nonsense.

Conversely, the Board's proposal to allocate switching costs on a shipment basis recognizes that unit train shipments have become far more efficient since the early 1970's. That result does make sense.

- **UP Alternative.** UP proposes a two-step alternative containing "an event-related component and a shipment size-related component."[10] In step 1, the Board would "[s]et the event-related component equal to the SEM costs per car for single-car shipments developed using the current make-whole methodology."[11] In step 2, the Board would "[s]et the shipment size-related component equal to the SEM costs remaining after assigning event-related costs to all shipments, divided by the number of cars moving in shipments of two or more cars."[12]

As explained in detail in Attachment 2, UP's alternative suffers from the same types of flaws that render AAR's alternative unusable and, like the AAR's alternative, produces absurd results when applied to unit train operations.

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[10] UP Comments at 8.

[11] *Id.*

[12] *Id.*

C. Requiring Reporting of Shipments Loaded and Terminated

In its Notice, the Board proposed to require reporting carriers to submit specified shipment information. The Board defined a shipment for these new reporting purposes as "a block of one or more cars moving under the same waybill from origin to destination." Notice at 5.

In its Comments, WCTL agreed with the Board that the Board needs to obtain shipment information from carriers in order to apply some of its new URCS proposals. WCTL also noted that the Board's definition of a "shipment" was easy to apply in the context of unit coal trains, as these trains move under the same waybill from origin to destination.

Several commenters have expressed concerns about the application of the Board's definition of a shipment to some types of movements, particularly intermodal movements.[13] Some of these commenters have asked the Board to perform a special study to determine how to define an intermodal shipment for URCS costing purposes.[14] While the definitional issues raised do not directly impact unit train shippers, WCTL does not oppose this special study request. Pending the completion of any such study, WCTL recommends that the Board apply its proposed shipment definition to all traffic for URCS costing purposes.

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[13] *See, e.g.*, AAR Comments at 14; BNSF Comments at 10.

[14] *See, e.g.*, AAR Comments at 15; BNSF Comments at 10.

D. Calculating Equipment Costs for the Use of Railroad-Owned Cars During Switching

In its Notice, the Board proposed to continue to calculate the costs of railroad-owned cars on a per-car basis in Phase II, but eliminate application of the current efficiency adjustments to those costs in Phase III. *Id.* at 6.

In its Comments, WCTL urged the Board to retain an efficiency adjustment for the use of railroad-owned cars during unit train switching because unit train switching is more efficient than single-car or multiple-car switching. Other commenters agree with WCTL.[15]

WCTL recognizes that by retaining an efficiency adjustment for equipment costs, the Board may need to retain some form of make-whole factor for this cost category, but in this instance, development of accurate costs should trump other considerations.

E. Calculating Station Clerical Costs on a Per-Shipment Basis

In its Notice, the Board proposed to calculate Phase II station clerical costs on a per-shipment basis, not the current per-car basis. The Board stated that this change was appropriate because calculating station clerical costs on a per-shipment basis "properly reflect[s] actual railroad operations or economies of scale" and reflects the fact

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[15] *See, e.g.*, AAR Comments at 17 ("[e]liminating those efficiencies that were derived from special studies is not justified and will result in less cost refinement than exists today"); UP Comments at 11 ("The Board's proposal to eliminate URCS's recognition of certain efficiencies that apply to car ownership costs when switching multi-car and trainload shipments in railroad-owned cars appears to reduce the overall accuracy of URCS.").

that "there is little difference in the administrative costs between shipments of different sizes." Notice at 7.

In its Comments, WCTL agreed with the Board that there are economies of scale associated with station clerical costs. WCTL cited as an example the fact that most unit train shipments of western coal – which typically include 135 individual cars – are invoiced on a single invoice, not 135 separate invoices. WCTL concluded that in the absence of actual study data, and subject to its review of the Board's actual implementation procedures, WCTL had no objection on theoretical grounds to the Board's calculation of Phase II station clerical costs on a per-shipment basis.

Most parties appear to agree with the Board (and WCTL) that there are economies of scale associated with station clerical costs. Most parties also express concerns about the lack of empirical data to support the Board's proposal. However, the only alternatives put forward are the same flawed approaches suggested by the AAR and UP to address the calculation of switching costs.

As between the Board's proposal to calculate station clerical costs on a shipment basis, and the alternatives put forward to AAR and UP, WCTL supports the Board's approach as WCTL believes that any future studies will confirm that the Board's approach will produce the most accurate cost results for unit train movements.

F. Calculating E/L Ratios for Unit Train Moves by Car Type

In its Notice, the Board proposed to change the current E/L ratio calculation for trainload moves from 2.0 to a ratio calculated by car-type. The Board explained that

it was making this change because while use of an E/L ratio of 2.0 was appropriate for "a unit train of privately-owned cars that cycles between point A and point B'" it was not appropriate for other trainload moves that do not cycle like unit trains. Notice at 7 n.10.

In its Comments, WCTL noted that the Board's proposal would create a new problem for unit train shippers whose trains do cycle because car-type data is not intended to be a surrogate for service-type information. WCTL used the following example to demonstrate this point:

> assume that a unit train shipper's cars cycle from A to B. Under the current procedure, the E/L ratio would be correctly set at 2.0. However, further assume that the system average E/L ratio for the shipper's car type is 2.3. In this example, the unit train shipper's URCS costs will be grossly inflated because the E/L ratio used would be 2.3, not 2.0.

WCTL Comments at 12. WCTL suggested that the Board could easily solve this problem by creating a new shipment type in URCS Phase III for dedicated train movements – *i.e.*, trains that cycle – and retain use of the 2.0 E/L ratio on these moves. *Id.*

Shipper commenters agree with WCTL's positions. *See, e.g.*, ARC Comments, Fauth V.S. at 22 ("For URCS costing of dedicated train service . . . the STB should allow parties to use a 2.0 E/L Ratio"); ACC Comments, Mulholland V.S. at 25 ("The STB has not attempted to demonstrate that its proposal to modify the empty return ratio for trainload movements to reflect the system average empty return ratio for the applicable car type and car owner would produce more accurate results than the current default empty return ratio for the affected movements.").

The AAR also acknowledges that the use of a 2.0 E/L ratio is appropriate for unit trains. See AAR Comments, Baranowski/Fisher V.S. at 17 ("URCS currently assumes that the empty-return miles for unit train shipments are equal to the loaded miles. This assumption is consistent with the operation of unit trains . . ."). Nevertheless, the AAR, and other carriers, support the Board's proposal because, they assert, "the impact of this proposal will be relatively small for many moves."[16]

In fact, the data AAR submits shows exactly the opposite. For example, the vast majority of UP Powder River Basin ("PRB") coal trains move in shipper-supplied plain gondolas, or general service open hopper cars, which cycle between origin and destination. Under current URCS procedures, the E/L ratio for these moves is 2.0. However, AAR's data shows that the E/L ratios for these UP moves would increase to 2.29 (for transportation in shipper-supplied plain gondola cars) and 2.76 (for transportation in shipper-supplied general service open hopper cars).[17] Increases of this magnitude in the E/L Ratio are not "relatively small," they are very large, and would produce substantially higher variable costs than those produced using the correct 2.0 E/L ratio.[18]

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[16] AAR Comments, Baranowski/Fisher V.S. at 18. *See also* UP Comments at 12 ("UP is not aware of any reason why use of an assumed E/L ratio of 2.0 would produce more accurate results on average than use of carriers' actual E/L ratios.").

[17] AAR Comments, Baranowski/Fisher V.S. at 18.

[18] WCTL notes that shipper-supplied gondola cars, and shipper-supplied general service open-top hopper cars, are used for many movements that do not cycle. For example, UP uses shipper-supplied open top hopper cars to carry a wide variety of bulk commodities (such as sand and gravel) in a variety of different kinds of service, including

WCTL recognizes that use of the 2.0 E/L ratio for unit train shipments in Phase III may require the use of a make-whole factor under current Board costing procedures, but this is another case where accuracy is of paramount importance to unit train coal shippers. In addition, application of a make-whole factor here should not produce "step function" concerns – *i.e.*, produce significant cost "breaks" between train types. Use of the 2.0 E/L ratio for cycling unit trains will decrease costs for non-unit train shippers in some instances (where the unit train car type has an E/L ratio of less than 2.0) and increase costs for non-unit train shippers in other instances (where the unit train car type has an E/L ratio greater than 2.0).

G. Increasing the Distance Between I&I Switches

URCS Phase III correctly excludes I&I switching when computing costs on unit train moves. WCTL continues to take no position on the Board's proposal to assume the distance between I&I switches is 320 miles rather than the current 200 miles.

H. Changing the Definition of Trainload

In its Comments, WCTL informed the Board that it had no objection to the Board's change in the definition of trainload for costing purposes from the current standard (50 cars) to the Board's proposed standard (80 cars). The Board's proposed change is generally supported by railroad commenters,[19] while some shipper commenters

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single-car, multiple-car and unit train service, with many unloaded cars moving to geographically different points for subsequent loadings.

[19] *See, e.g.*, AAR Comments, Baranowski/Fisher V.S. at 21.

seek further study of the line of demarcation between trainload and non-trainload shipments.[20]

As WCTL explained in its Comments, its members ship coal in unit trains that are much longer than 80 cars, so its members' traffic will be considered "trainload" under both the current, and proposed new, definitions of trainload service. However, WCTL has no objection if the Board decides to conduct further studies on the appropriate definition of trainload service for URCS purposes.

I. Adjusting LUM Cost Allocations on Trainload Shipments

In its Notice, the Board proposed to modify its calculation of the locomotive unit miles ("LUM") used in calculating trainload costs. Specifically, the Board proposed that "the entire train's LUM costs would be allocated to the trainload shipment, regardless of the gross tons of the trainload shipment relative to the average gross tons of a particular train." *Id.* at 9. The Board asserted that this approach "should be more accurate than the current approach because, by definition, a trainload shipment has no other shipments that should share the LUM costs of that train." *Id.*

In its Comments, WCTL agreed that as between the two approaches posited by the Board – its current approach to calculating URCS LUM costs and its new proposed approach – the Board's proposed approach should produce more accurate results for the reason articulated by the Board.

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[20] *See, e.g.*, ACC Comments at 10.

All commenters agree with the Board that under its proposal, "the entire train's LUM costs would be allocated to the trainload shipment." *Id.* However, railroad commenters oppose the Board's proposal. They argue that the current trailing weight adjustment is necessary because "heavier trains require more locomotives and thus have higher LUM costs than lighter trains."[21]

The railroad commenters present no empirical data to support their assertion that "heavier trains require more locomotives" in all cases and this assertion is certainly not correct for PRB coal shippers. As discussed in detail in Attachment 3, PRB unit train sizes have increased for many moves since the early 1990's from approximately 115 cars per train to approximately 135 cars per train while the number of locomotives on the trains has generally remained constant – 3 locomotives per train.

The reason why train weights have increased – but the number of locomotives has not – is attributable to the use of higher horsepower locomotives and the use of distributed power trains. The PRB experience clearly teaches that heavier unit trains do not necessarily require more locomotives.

It also teaches that LUM costs on heavier trains are lower on a cost per ton basis than the LUM costs on lighter trains. All other things being equal, a unit train with 3 locomotives hauling 135 cars will have lower LUM costs per ton that a unit train with 3 locomotives hauling 115 cars.

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[21] UP Comments at 15. *See also* AAR Comments at 18; BNSF Comments at 14.

A costing example further underscores the need to eliminate the trailing weight adjustment. Assume that there is a BNSF unit train movement of 1,000 miles, 135 cars, 120 net tons per car, 25.6 tare tons per car, a round trip gross trailing weight of 23,112 tons (135 cars x 120 tons in the loaded direction + 135 cars x 25.6 tons x 2 directions) and 3 locomotives are actually used to provide the service.

Under the Board's URCS Phase III procedures, the LUM costs are developed using an algorithm that adjusts the system-average unit train consist of 3.2535 locomotives (*i.e.*, a figure higher than the actual number of locomotives used) based on the system-average round trip gross trailing weight of 18,881 tons (*i.e.*, system average unit train weight of 9,440.5 tons x 2 directions, a figure lower than the actual trailing weight).[22]

In this example, URCS Phase III costs are calculated based on the presumption that 3.98 locomotives are needed to provide the service[23] when in fact only 3 locomotives are actually used. Elimination of the trailing weight adjustment will produce far more accurate LUM costs for PRB coal shippers. In fact, using the system average of 3.2535 locomotives would overstate the movement costs even before the Phase III LUM adjustment was applied to the movement.

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[22] Attachment 3 contains the URCS Phase III run results.

[23] 3.2535 x 23,112/18,881.

J. Adjusting LUM Cost Allocations on Non-Trainload Movements

As discussed in its Comments, WCTL takes no position on the Board's proposals to modify its current procedures for calculating LUM costs on non-trainload movements.

CONCLUSION

WCTL requests that the Board take actions in this proceeding in a manner consistent with its Comments.

Respectfully submitted,

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Dated: September 5, 2013

VERIFICATION

I, Paul H. Reistrup, verify under penalty of perjury that I am an independent rail operations consultant, and that I am familiar with the operation and equipment consists of Powder River Basin and other western coal unit trains, having personally observed their operation on many occasions in the course of consulting assignments including assignments to develop the operating plans for stand-alone railroads in the following western coal rate cases: STB Docket Nos. 41185, 41191 (Sub-No. 1), 42088, 42113 and 42136. I further verify that I have read the portions of the foregoing Reply Comments of the Western Coal Traffic League pertaining to Empty/Loaded ratios for unit coal trains and the relationship between coal-train weight and the number of locomotives on the train, and that the information contained therein is true and correct. Further, I certify that I am qualified and authorized to file this Verification.

Paul H. Reistrup

Executed on: 29 August 2013

CERTIFICATE OF SERVICE

I hereby certify that this 5th day of September, 2013, I have served a copy of the Public Version of the Reply Comments of the Western Coal Traffic League, by U.S. Mail, postage prepaid, upon all known parties of record in this case. I further certify that I have served a copy of the Highly Confidential Version of the Reply Comments of the Western Coal Traffic League, by U.S. Mail, postage prepaid, upon the following:

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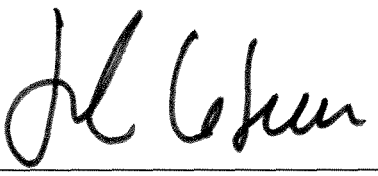

UNIT TRAIN SWITCHING

UP claims that substantial switching takes place at destination on western coal unit train movements, citing two STB coal rate decisions involving atypical power plants without destination loop tracks. UP Comments at 5 n.4. However, most western coal rate decisions have involved typical western coal-fired power plants that do have destination loop tracks.

A. Western Coal Rate Cases Cited By UP

The two coal rate cases cited by UP (*WPL*[1] and *Northern States Power*[2]) were atypical in that both involved coal movements to older power plants (built before 1970) that were constructed with physical limitations that precluded loop tracks, and that were not originally designed to burn western coal.

WCTL further notes that two of the four coal units at one of the two destination power plants involved in the *Northern States Power* case, the Black Dog plant at St. Paul, MN, have been retired, and the other two coal units are scheduled for retirement in 2015.

B. Western Coal Rate Cases Not Cited By UP

UP omits any discussion of eleven additional decided or pending coal rate cases involving western unit train coal movements, all of which involved a power plant

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[1] *Wisc. Power & Light Co. v. Union Pac. R.R.*, 5 S.T.B. 955, 992-93 (2001).

[2] *N. States Power Co. Minn. v. Union Pac. R.R.*, STB Docket No. 42059.

with a loop track. *See Bituminous Coal - Hiawatha, Utah to Moapa, Nev.*, ICC Docket No. 37038 (Reid Gardner plant near Moapa, NV); *Arizona Pub. Serv. Co. v. The Atchison, Topeka & Santa Fe Ry.*, STB Docket No. 41185 (Cholla plant near Joseph City, AZ); *W. Tex. Utils. Co. v. Burlington N. RR.*, STB Docket No. 41191, and *AEP Tex. N. Co. v. BNSF Ry.*, STB Docket No. 41191 (Sub-No. 1) (Oklaunion plant near Vernon, TX); *Tex. Mun. Power Agency v. Burlington N. & Santa Fe Ry.*, STB Docket No. 42056 (Gibbons Creek plant near Iola, TX); *Pub. Serv. Co. of Colo. d/b/a Xcel Energy v. Burlington N. & Santa Fe Ry.*, STB Docket No. 42057 (Pawnee plant near Brush, CO); *Otter Tail Power Co. v. BNSF Ry.*, STB Docket No. 42071 (Big Stone plant near Milbank, SD); *W. Fuels Ass'n., Inc. & Basin Elec. Power Coop. v. BNSF Ry.*, STB Docket No. 42088 (Laramie River plant near Wheatland, WY); *Kan. City Power & Light Co. v. Union Pac. R.R.*, STB Docket No. 42095 (Montrose plant near Ladue, MO); *Okla. Gas & Elec. Co. v. Union Pac. R.R.*, STB Docket No. 42111 (Muskogee plant near Fort Gibson, OK); *Ariz. Elec. Power Coop., Inc. v. BNSF Ry. & Union Pac. R.R.*, STB Docket No. 42113 (Apache plant near Cochise, AZ); and *Intermountain Power Agency v. Union Pac. R.R.*, STB Docket No. 42136 (Intermountain plant near Lynndyl, UT).[3]

[3] The fact that all of these power plants have destination loop tracks can be confirmed by viewing them on Google Earth.

ANALYSIS OF ALTERNATIVE COSTING PROPOSALS

In their Comments, the AAR and UP present alternative proposals to calculate switching costs and station clerical costs.

I.
AAR PROPOSAL

AAR presents a convoluted alternative proposal that produces absurd results when applied to unit train coal shipments. It also suffers from many methodological errors.

A. The AAR's Convoluted Proposal

AAR's convoluted proposal contains many steps:

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B. The AAR's Alternative Produces Absurd Results

Under current URCS procedures, total terminal switching costs are divided by total cars switched to arrive at a system average cost per car switched (*see* A.6.a above). In URCS Phase III the system average terminal switch cost per car is reduced by 75% when applying the unit cost to the number of cars in a unit train in order to reflect the efficiencies that the ICC determined were applicable to unit trains in Ex Parte 270 (Sub-No. 4) (*see* A.6.b-c above).[1]

In the first step of the AAR's proposed alternative, 30% of the total terminal switching costs are divided by total cars switched to arrive at a system average

[1] *See Investigation of Railroad Freight Rate Structure Coal*, 345 I.C.C. 71, 227-28 (1974) ("Ex Parte 270 (Sub-No. 4)").

cost component per car switched, then 100% of that amount is applied to all cars, including cars moving in unit trains.[2] After this first step, the terminal switching costs for each car in a unit train has increased by 20% (0.30% [percentage of system switching costs applied to on a per car basis in AAR's model] ÷ 0.25% [percentage of system switching costs applied to cars moving in trainload service in the current URCS Phase III model] - 1) over the current URCS methodology.

In addition, in the second step of the proposed AAR model, 70% of the total terminal switching costs are divided by total shipments switched to arrive at system average cost component per shipment switched, then a fraction of that amount equal to the shipment share (1 ÷ total cars in the shipment) is applied to cars moving in cuts of two or more cars, including unit trains, thereby further increasing the amount by which the AAR model terminal switching costs exceed the existing URCS Phase III model terminal switching costs for unit train traffic.

In other words, dated studies showed that years ago, terminal switching activity for unit trains was four times as efficient (one quarter as costly) as terminal switching for the average car. In the intervening years, unit trains have become longer and loop tracks at mines and destinations have become more common thereby eliminating the need for terminal switching for many unit coal train movements. Yet the model proposed by AAR implies that terminal operations for unit trains have become

[2] AAR's model does not calculate any specific costs. Instead, AAR quantifies the number of switch events that would be applied to its unspecified unit cost. Thus, the cost increases described here are implicit in the AAR's model.

relatively less efficient than they were when the currently used efficiency adjustment factor was developed in the 1970s. This, of course, is an absurd result.

C. The AAR's Proposal Has Many Other Flaws

In addition to producing absurd results, the AAR's alternative has many other flaws, including the following:

- The AAR never explains why it is proposing a 70/30 split for all railroads when its calculations of the split for carriers other than BNSF are not 70/30.
- The AAR presents no empirical data supporting the use of its proposed 70/30 split for calculating railroad-owned car costs during switching or for using a similar procedure to calculate station clerical costs.
- The AAR arbitrarily assumes that intermodal shipments {

}.

- The results from AAR's model are not reliable. As explained above, the AAR's model attempts to {

}.

II.
UP PROPOSAL

UP has proposed that the Board adopt a different procedure for allocating switching, station clerical, and railroad-owned car costs during switching. This proposal, like the AAR's, produces absurd results when applied to unit train shipments, and like the AAR's proposal, has many other flaws.

A. UP's Proposal

UP proposes that the Board develop a split between event-related costs and shipment-size related costs. UP's proposal is predicated on the following hypothetical:

> 1. UP creates a hypothetical railroad that moves 300 one-car shipments and one 100-car unit train. UP assumes that the total switching costs borne by its hypothetical railroad equal $400. UP uses the current URCS model to calculate the per-car cost for one-car shipments after the make-whole factor is applied. ($400 total / 400 cars = $1 per car; $100 pre-efficiency adjustment for the unit train shipment; $25 post-efficiency adjustment for the unit train shipment; $75 to be reallocated to the 300 one-car shipments; $75 / 300 = $0.25 make-whole per car; $1 + $0.25 = $1.25 with make-whole.) UP asserts that this amount should be declared the event related cost. Thus, UP assumes that the total pool of switching costs is $400 and the total event costs consume $376.25 of the $400 (301 switch events at $1.25 per event).
>
> 2. UP then determines that the size-related cost portion would simply allocate the balance of the costs on a per car basis to all cars moving in blocks of more than one car. UP calculates the per car additive as ($400-$376.25)/ 100=$0.2375. UP then applies the size additive to all cars moving in the unit train. Thus, the unit train cost is $25.00 derived as $1.25 + ($.2375*100) = $25.00. The cost for single car is only $1.25 (the shipment cost).

B. UP's Proposal Produces Absurd Results

UP's proposal produces absurd results. For example, if the UP model is applied to the 2011 BNSF URCS and traffic group, {

}

[3] {

[4] {

}.[5]

C. UP's Proposal Has Many Other Flaws

In addition to producing absurd results, UP's proposal has many other flaws, including the following:

- Despite its argument that each shipment should have an event component and a size component, it assigns no size component cost to the single car shipments. If there are two components, then each event should incur both.

- UP's example is further flawed in that assuming that each event gets one "free" car, it doesn't grant the unit train a free car. Instead, it assumes that all 100 cars incur a cost.

}

[5] UP offered no hypothetical demonstration of its model as applied to interchange switching.

- UP's examples are based solely on hypothetical data. No attempt is made to show that the hypothetical results bear any correlation whatsoever to a carrier's actual switching costs.

- UP's proposal adds unnecessary complications because the first step of the UP model requires the use of the current model (*i.e.*, system average plus make-whole) to determine the "event" component. After that step, UP would require an additional step wherein residual switching costs (those left after removing switching event costs) would be netted out and then divided by all the cars moving in shipments with two or more cars.

TRAILING WEIGHT ADJUSTMENT

The Board's proposed elimination of the trailing weight adjustment is supported by BNSF's and UP's actual PRB operations, as well as the cost overstatements caused by the current application of the trailing weight adjustment in developing URCS Phase III variable costs on PRB unit train movements.

A. PRB Experience

Railroad commenters argue that the Board should retain the current trailing weight adjustment in calculating LUM costs on unit trains because "heavier trains require more locomotives and thus have higher LUM costs than lighter trains."[1] While it is correct that different kinds of unit trains can have significantly different weights and locomotive requirements, this generally is not true of unit trains carrying PRB coal.

Since the early 1990's, most PRB coal trains have been powered by three locomotives regardless of their length and weight, except where specific local circumstances (such as movements involving a line segment with a heavy grade) may require an additional locomotive. This result occurred because the two rail carriers serving the PRB (BNSF and UP) began using high-horsepower, high-adhesion AC locomotives in PRB coal service and adopted a 2x1 distributed-power ("DP") locomotive configuration for coal unit trains.[2] These technological advances have enabled the same

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[1] UP Comments at 15. *See also* AAR Comments at 18; BNSF Comments at 14.

[2] A 2x1 DP locomotive configuration involves placing two units on the front of the train and one unit on the rear of the train. The rear (DP) locomotive unit has no engineer and is remotely controlled by radio signals from the lead locomotive. The use of a DP

number of locomotives to haul coal trains consisting of anywhere from 115 to 135 or more cars.

Paul Reistrup (who is verifying this section of WCTL's Reply) has personally observed that most PRB coal trains have been powered by three locomotives in a 2x1 DP configuration for the past 15 years, and that this basic configuration has not changed as coal-train lengths have increased from 115 cars to 135 cars. This is also confirmed by decisions and public evidentiary records in several maximum reasonable rate cases involving the movement of PRB coal. For example, in *W. Tex. Utils. Co. v. Burlington N. R.R.*, 1 S.T.B. 638 (1996), the stand-alone railroad or SARR (replicating PRB coal service provided by a BNSF predecessor) transported coal trains containing between 105 and 118 cars with three locomotives. *Id.* at 665-68.

The same pattern can be observed from the public evidence filed in several more recent PRB coal rate cases. In the *WFA* case,[3] the complainants equipped most of the SARR's coal trains with three late-model AC locomotives in a 2x1 DP configuration, including trains operating with 135 cars loaded to 286,000 pounds gross weight on rail, stating that this was generally consistent with BNSF's practice.[4] On reply,

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locomotive configuration reduces the drawbar tension between cars, and enables the same number of locomotives of a given model to haul heavier trains.

[3] *W. Fuels Ass'n, Inc. & Basin Elec. Power Coop. v. BNSF Ry.*, NOR 42088 (STB served Sept. 10, 2007).

[4] Opening Evidence and Argument of Western Fuels Association, Inc. and Basin Electric Power Cooperative (Public Version) at III-C-9, *W. Fuels Ass'n Inc. & Basin Elec. Power Coop. v. BNSF Ry.*, NOR 42088 (filed April 19, 2005).

BNSF accepted the complainant's locomotive configuration and did not dispute that the configuration was consistent with its own practice.[5]

In *AEPCO 2011*,[6] the complainant similarly equipped all of the SARR's PRB coal trains with three locomotives in a 2x1 DP configuration stating this was consistent with BNSF's and UP's practice.[7] On reply, the defendants acknowledged that BNSF normally equips all of its PRB coal trains with three locomotives in a 2x1 DP configuration.[8] The defendants did not dispute that UP's PRB coal trains normally operate with three locomotives in a 2x1 DP configuration.

These facts demonstrate that PRB unit coal trains have not required more locomotives as their weight has increased. Moreover, the increase in coal train size and weight in recent years without a corresponding increase in the number of locomotives per train has made PRB coal movements more efficient on a unit-cost basis, as total LUMs per train have not increased appreciably whereas the number of tons handled per train has increased by approximately 25 percent.

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[5] Reply Evidence and Argument of BNSF Railway (Public Version) at III.C-7, *W. Fuels Ass'n Inc. & Basin Elec. Power Coop. v. BNSF Ry.*, NOR 42088 (filed July 20, 2005).

[6] *Ariz. Elec. Power Coop., Inc. v. BNSF Ry. & Union Pac. R.R.*, NOR 42113 (STB served Nov. 22, 2011).

[7] Opening Evidence and Argument of Arizona Electric Power Coop., Inc. (Public Version) at III.C-8-10, *Ariz. Elec. Power Coop., Inc. v. BNSF Ry. & Union Pac. R.R.*, NOR 42113 (filed Jan. 25, 2010).

[8] Joint Reply Evidence and Argument of BNSF Ry. and Union Pacific R.R. (Public Version) at III.C-12-13, *Ariz. Elec. Power Coop., Inc. v. BNSF Ry. & Union Pac. R.R.*, NOR 42113 (filed May 7, 2010).

B. PRB Unit Train Costing Example

A costing example further underscores the need to eliminate the trailing weight adjustment. WCTL ran the Board's Phase III URCS model for an assumed BNSF unit train movement of 1,000 miles, 135 cars, 120 net tons per car, 25.6 tare tons per car, for a round trip gross trailing weight of 23,112 tons (135 cars x 120 tons in the loaded direction + 135 cars x 25.6 tons x 2 directions).

Under the Board's URCS Phase III procedures, the LUM costs are developed using a system-average unit train consist of 3.2535 locomotives (*i.e.*, a figure higher than the actual number of locomotives used) and a system-average round trip gross trailing weight of 18,881 tons (*i.e.*, system average unit train weight of 9,440.5 tons x 2 directions, a figure lower than the actual trailing weight). A copy of the resulting cost calculations are appended to this Attachment 3.

In this example, URCS Phase III costs are calculated based on the presumption that 3.98 locomotives are needed to provide the service[9] when in fact only 3 locomotives are actually used. This example further demonstrates that elimination of the trailing weight adjustment will produce far more accurate LUM costs for PRB coal shippers. In fact, using the system average of 3.2535 locomotives would overstate the movement costs even before the Phase III LUM adjustment was applied to the movement.

[9] 3.2535 x (23,112/18,881).

Movement Cost Program 8/21/2013

Railroad	Segment Type	Distance	Circuity	LE/Ratio
BNSF	OT	1,000	1.000	2.000

Freight Car: Gondola - Plain
Number of Cars: 135
Car Ownership: Private
COMMODITY: 11 Coal
Tons per Car: 120
Shipment Size: Unit Train Move

Variable Cost of Service Summary

Railroad	Variable Cost	Loss & Damage	Ex Parte Adjustment	Total Variable Cost
BNSF	$215,177.38	$53.95	$0.00	$215,231.34

Cost per Hundred Weight $0.6643
Cost per Carload $1,594.31
Cost per Ton $13.29

Input Railroad Data File: 2011 Railroad Unit Cost.XML
----------File Documentation Statements----------

BNSF This railroad data set created on 11/28/2012 Source master file header comment:
This unit cost file created 11/28/2012 9:41:35 AM
This File Created: 10-18-2012 From URCS File Created on 10/18/2012

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation	BNSF Segment	Total
	Train Mileage		
101	Short line miles [User]	1,000	1,000
102	Circuity factor E2L104C5	1.0000	1.0000
103	Actual miles including circuity L101*L102	1,000	1,000
104	Actual unit train miles including circuity [User]	1,000	1,000
105	E/L ratio, this car E2L104C3	2.0000	2.0000
106	Actual way train miles including circuity E2L201C1/E2L118C7*L102/E2L118C4 see footnote <1>	0	
107	Actual through train miles including circuity L103-L106	0	
108	Total unit train miles including empty return L104*L105	2,000	2,000
109	Total way train miles including empty return L105*L106	0	
110	Total through train miles including empty return L105*L107	0	
111	Total train miles including empty return L103*L105	2,000	2,000

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Car Mile Costs (Other then Clerical)			
201	Number of freight cars	[User]	135	135
202	TCU's per flat car	E2L202C1 see footnote <2>	0.0000	
203	Number of TCUs	[User]	0.0000	
204	TCU freight cars	L203/L202	0.0000	
205	Car miles including empty return	tofc:L204*L111 other:L201*L111	270,000	270,000
206	UC per CM-OPR	E1L102C1	0.0000	
207	VC-CM-OPR	L205*L206	0.00	
208	UC per CM-DRL	E1L102C2	0.0000	
209	VC-CM-DRL	L205*L208	0.00	
210	UC per CM-ROI	E1L102C3	0.0000	
211	VC-CM-ROI	L205*L210	0.00	
	Gross Ton Mile Costs			
212	Tare weight (tons) this car type	E2L104C1	25.6000	25.6000
213	Freight car tare ton mileage	tofc:L111*L212*L204 other:L111*L212*L201	6,912,000	6,912,000
214	Tare weight (tons) of one TCU	refrigerated:E2L203C1 other:E2L204C1	0.0000	
215	E/L ratio - TCU	E2L207C1	0.0000	
216	TCU tare ton mileage	L103*L203*L214*L215	0	
217	Weight of shipment (tons)	[User]	16,200	16,200
218	Shipment net ton miles	L217*L103	16,200,000	16,200,000
219	Gross ton miles	L213+L216+L218	23,112,000	23,112,000
220	UC per GTM - OPR	E1L101C1	0.0030	0.0030
221	VC - GTM - OPR	L219*L220	68,485.75	68,485.75
222	UC per GTM - DRL	E1L101C2	0.0007	0.0007
223	VC - GTM - DRL	L219*L222	16,293.62	16,293.62
224	UC per GTM - ROI	E1L101C3	0.0017	0.0017
225	VC - GTM - ROI	L219*L224	39,979.59	39,979.59

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Locomotive Unit Miles			
226	Average loco units/unit train	E2L208C1	3.2535	3.2535
227	Average loco units/way train	E2L209C1	2.1568	2.1568
228	Average loco units/through train	E2L210C1	3.1263	3.1263
229	Unit train loco unit miles	L108*L226	6,507	6,507
230	Way train loco unit miles	L109*L227	0	
231	Through train loco unit miles	L110*L228	0	
232	Avg trailing gross tons-unit round trip	E2L211C1*L105	18,881	18,881
233	Avg trailing gross tons-way round trip	E2L212C1*L105	4,090	4,090
234	Avg trailing gross tons-through round trip	E2L213C1*L105	11,234	11,234
235	Gross tons - cars & contents	tofc:(L204*L212*L105)+ (L203*L214*L215)+L217 other:(L201*L212*L105)+L217	23,112.00	23,112.00
236	Percent of unit train tonnage	L235/L232	1.2241	1.2241
237	Percent of way train tonnage	L235/L233	5.6514	5.6514
238	Percent of through train tonnage	L235/L234	2.0574	2.0574
239	Unit train LUM (allc.)	L229*L236	7,965.2712	7,965.2712
240	Way train LUM (allc.)	L230*L237	0.0000	
241	Thr. train LUM (allc.)	L231*L238	0	
242	Total shipment LUM (allocated)	L239+L240+L241	7,965	7,965
243	UC per LUM-OPR	E1L105C1	6.5036	6.5036
244	VC-LUM-OPR	L242*L243	51,803.12	51,803.12
245	UC per LUM-DRL	E1L105C2	0.7953	0.7953
246	VC-LUM-DRL	L242*L245	6,334.55	6,334.55
247	UC per LUM-ROI	E1L105C3	0.4514	0.4514
248	VC-LUM-ROI	L242*L247	3,595.61	3,595.61

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Carload and Clerical Costs			
250	Shipment origination/termination (1.0-origin; 1.0-termination) see footnote <3>		2	2
251	Carloads orig/term (tofc)	L204*L250	0	
252	Carloads orig/term (non-tofc)	L201*L250	270	270
253	Carloads handled (tofc)	L204	0	
254	Carloads handled (non-tofc)	L201	135	135
255	UC per CM-CLR-OPR	E1L110C1	0.0000	
256	VC-CM CLR-OPR	L205*L255	0.00	
257	UC per clot-CLR-OPR	E1L109C1	5.4822	5.4822
258	VC-clot CLR-OPR	L252*L257	1,480.19	1,480.19
259	UC per hand-CLR-OPR	E1L107C1	0.0000	
260	VC-hand CLR-OPR	L254*L259	0.00	
261	UC per clot-other-OPR	E1L108C1	0.0000	
262	VC-clot-other-OPR	L252*L261	0.00	
263	UC per hand-other-OPR	E1L106C1	0.9428	0.9428
264	VC-hand-other-OPR	L254*L263	127.28	127.28
265	UC per hand-other-DRL	E1L106C2	0.0000	
266	VC-hand-other-DRL	L254*L265	0.00	
267	UC per hand-other-ROI	E1L106C3	0.0000	
268	VC-hand-other-ROI	L254*L267	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Train Mile Costs			
	Crew Wage Expense			
269	Shipment share-unit train miles	L108*1.00	2,000	2,000
270	Shipment share-way train miles	L109*L237	0	
271	Shipment share-thr. train miles	L110*L238	0	
272	Total train miles (allocated)	L269+L270+L271	2,000	2,000
273	Actual crew wage/train mile-unit		0.00	
274	Actual crew wage/train mile-way		0.00	
275	Actual crew wage/train mile-thr.	see footnote <5>	0.00	
276	Average/wages per train mile	E2L218C1	7.15	7.15
277	Crew wages adj. ratio-unit train		1.00	1.00
278	Crew wages adj. ratio-way train		1.00	1.00
279	Crew wages adj. ratio-thr. train		1.00	1.00
280	UC per TM-crew OPR	E1L104C1	9.4303	9.4303
281	VC-TM-crew OPR-unit train	L269*L277*L280	18,860.53	18,860.53
282	VC-TM-crew OPR-way train	L270*L278*L280	0.00	
283	VC-TM-crew OPR-through train	L271*L279*L280	0.00	
284	total VC-TM-crew OPR	L281+L282+L283	18,860.53	18,860.53
	Other Expenses			
285	UC per TM-other-OPR	E1L103C1	0.3246	0.3246
286	VC-TM-other-OPR	L272*L285	649.25	649.25
287	UC per TM-other-DRL	E1L103C2	0.0036	0.0036
288	VC-TM-other-DRL	L272*L287	7.17	7.17
289	UC per TM-other-ROI	E1L103C3	0.0053	0.0053
290	VC-TM-other-ROI	L272*L289	10.56	10.56

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Industry, Interchange and Inter & Intratrain Switching			
301	SEM per industry switch event	E2L104C25	1.0620	1.0620
302	SEM per interchange switch event	E2L104C26	1.1682	1.1682
303	SEM per I&I train switch event	E2L104C29	0.0000	
304	Spotted-pulled ratio this car	E2L104C8	2.0000	2.0000
305	Industry switch events	L252*L304	540.0000	540.0000
306	Avg miles bet. interchange event	E2L104C24	2,487	2,487
307	Number of interchange events if OT: zero (0.0) if OD or RT: one (1.0) if RD: two (2.0) if OR: L111/L306 see footnote <4>		0.0000	
308	Number of cars interchanged tofc:L105*L307*L204 other:L105*L307*L201		0	
309	Avg miles between I&I sw event	E2L104C23	200	200
310	Cars given I&I switch	L205/L309	1,350	1,350
311	Total SEM-industry	L301*L305	573.4636	573.4636
312	Total SEM-interchange	L302*L308	0.0000	
313	Total SEM-i&i train	L303*L310	0.0000	
314	Total SEM	L311+L312+L313	573.4636	573.4636
315	UC per SEM-OPR	E1L111C1	5.7597	5.7597
316	VC-SEM-OPR	L314*L315	3,302.99	3,302.99
317	UC per SEM-DRL	E1L111C2	0.7758	0.7758
318	VC-SEM-DRL	L314*L317	444.88	444.88
319	UC per SEM-ROI	E1L111C3	4.6005	4.6005
320	VC-SEM-ROI	L314*L319	2,638.22	2,638.22

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Intraterminal and Interterminal Switching			
321	Cars-intraterm switching [User]		0.0000	
322	Cars-interterm switching [User]		0.0000	
323	Cars-intraterminal switching including empty	L304*L321	0.0000	
324	Cars-interterminal switching including empty	L304*L322	0.0000	
325	SEM per intraterminal switch	E2L104C27	0.0000	
326	SEM per interterminal switch	E2L104C28	0.0000	
327	Total SEM intraterm	L323*L325	0.0000	
328	Total SEM interterm	L324*L326	0.0000	
329	VC-intra-SEM-OPR	L315*L327	0.00	
330	VC-intra-SEM-DRL	L317*L327	0.00	
331	VC-intra-SEM-ROI	L319*L327	0.00	
332	VC-inter-SEM-OPR	L315*L328	0.00	
333	VC-inter-SEM-DRL	L317*L328	0.00	
334	VC-inter-SEM-ROI	L319*L328	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Private Line Car Rentals			
401	Total car miles	L205	270,000	270,000
402	Rental cost per car mile [User]		0.00	0.00
403	General overhead ratio	E2L219C1	1.0870	1.0870
404	UC per CM-rental	E1L204C13	0.0043	0.0043
405	VC-CM-rental		1,164.08	1,164.08
	if L402=0:L401*L404			
	else:L401*L402*L403			
	Railroad Owned Cars-Mileage Costs			
406	Total car miles	L205	0	
407	Actual charge per car mile		0.00	
408	General overhead ratio	E2L219C1	0.0000	
409	VC-CM-total	L406*L407*L408	0.00	
	L409 used only if L407 used			
410	UC per CM(R)-OPR	E1L204C1	0.0000	
411	VC-CM(R)-OPR	L406*L410	0.00	
412	UC per CM(r)-DRL	E1L204C2	0.0000	
413	VC-CM(r)-DRL	L406*L412	0.00	
414	UC per CM(r)-ROI	E1L204C3	0.0000	
415	VC-CM(r)-ROI	L406*L414	0.00	
416	Industry switch event (L&E)	L305	0.0000	
417	Interchange swt event (L&E)	L308	0.0000	
418	I&I train swt event (L&E)	L310	0.0000	
419	CM(Y)/industry switch (L-E)	E2L104C17	0.0000	
420	CM(Y)/interchange switch (L-E)	E2L104C18	0.0000	
421	CM(Y)/I&I train switch (L-E)	E2L104C21	0.0000	
422	CM(Y)-industry	L416*L419	0.0000	
423	CM(Y)-interchange	L417*L420	0.0000	
424	CM(Y)-I&I train	L418*L421	0.0000	
425	CM(Y)-total	L422+L423+L424	0.0000	
426	UC per CM(Y)-OPR	E1L204C4	0.0000	
427	VC-CM(Y)-OPR	L425*L426	0.00	
428	UC per CM(Y)-DRL	E1L204C5	0.0000	
429	VC-CM(Y)-DRL	L425*L428	0.00	
430	UC per CM(Y)-ROI	E1L204C6	0.0000	
431	VC-CM(Y)-ROI	L425*L430	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Railroad Owned Cars-Time Costs			
432	Actual charge per day [User]		0.00	
433	Total car days	L436+L451	0	
434	VC-CD-total	L408*L432*L433	0.00	
	L434 used only if L432 used			
435	Average CM(R)/CD(R)	E2L104C22	0.00	
436	Car days-running	L406/L435	0.0000	
437	UC per CD(R)-OPR	E1L204C7	0.0000	
438	VC-CD(R)-OPR	L436*L437	0.00	
439	UC per CD(R)-DRL	E1L204C8	0.0000	
440	VC-CD(R)-DRL	L436*L439	0.00	
441	UC per CD(R)-ROI	E1L204C9	0.0000	
442	VC-CD(R)-ROI	L436*L441	0.00	
443	CD(Y)/industry switch (L or E)	E2L104C9	0.0000	
444	CD(Y)/interchange swt (L or E)	E2L104C10	0.0000	
445	CD(Y)/I&I train switch (L or E)	E2L104C13	0.0000	
446	CD(Y)-industry(L&E)	L443*L416	0.0000	
447	CD(Y)-interchange(L&E)	L444*L417	0.0000	
448	CD(Y)-i&i train(L&E)	L445*L418	0.0000	
449	CD(Y)-per loading & unloading for industry switch	E2L104C14	0.0000	
450	CD(Y)-L&UL	L252*L449	0.0000	
451	CD(Y) total	L446+L447+L448+L450	0.0000	
452	UC per CD(Y)-OPR	E1L204C10	0.0000	
453	VC-CD(Y)-OPR	L451*L452	0.00	
454	UC per CD(Y)-DRL	E1L204C11	0.0000	
455	VC-CD(Y)-DRL	L451*L454	0.00	
456	UC per CD(Y)-ROI	E1L204C12	0.0000	
457	VC-CD(Y)-ROI	L451*L456	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Railroad Owned Cars-Accessorial Services			
458	UC per CM(R)-OPR	E1L219C1	0.0000	
459	VC-CM(R)-OPR	L406*L458	0.00	
460	UC per CM(R)-DRL	E1L219C2	0.0000	
461	VC-CM(R)-DRL	L406*L460	0.00	
462	UC per CM(R)-ROI	E1L219C3	0.0000	
463	VC-CM(R)-ROI	L406*L462	0.00	
464	UC per CM(Y)-OPR	E1L219C4	0.0000	
465	VC-CM(Y)-OPR	L425*L464	0.00	
		if IA:L484*L464		
		if IR:L485*L464		
466	UC per CM(Y)-DRL	E1L219C5	0.0000	
467	VC-CM(Y)-DRL	L425*L466	0.00	
		if IA:L484*L466		
		if IR:L485*L466		
468	UC per CM(Y)-ROI	E1L219C6	0.0000	
469	VC-CM(Y)-ROI	L425*L468	0.00	
		if IA:L484*L468		
		if IR:L485*L468		
470	UC per CD(R)-OPR	E1L219C7	0.0000	
471	VC-CD(R)-OPR	L436*L470	0.00	
472	UC per CD(R)-DRL	E1L219C8	0.0000	
473	VC-CD(R)-DRL	L436*L472	0.00	
474	UC per CD(R)-ROI	E1L219C9	0.0000	
475	VC-CD(R)-ROI	L436*L474	0.00	
476	UC per CD(Y)-OPR	E1L219C10	0.0000	
477	VC-CD(Y)-OPR	L451*L476	0.00	
		if IA:L496*L476		
		if IR:L497*L476		
478	UC per CD(Y)-DRL	E1L219C11	0.0000	
479	VC-CD(Y)-DRL	L451*L478	0.00	
		if IA:L496*L478		
		if IR:L497*L478		
480	UC per CD(Y)-ROI	E1L219C12	0.0000	
481	VC-CD(Y)-ROI	L451*L480	0.00	
		if IA:L496*L480		
		if IR:L497*L480		

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Railroad Owned Cars - Intraterminal and Interterminal Switching			
482	CM(Y) per intraterminal event	E2L104C19	0.0000	
483	CM(Y) per interterminal event	E2L104C20	0.0000	
484	Total CM(Y) intraterminal	L323*L482	0.0000	
485	Total CM(Y) interterminal	L324*L483	0.0000	
486	VC-intra-CM(Y)-OPR	L426*L484	0.00	
487	VC-intra-CM(Y)-DRL	L428*L484	0.00	
488	VC-intra-CM(Y)-ROI	L430*L484	0.00	
489	VC-inter-CM(Y)-OPR	L426*L485	0.00	
490	VC-inter-CM(Y)-DRL	L428*L485	0.00	
491	VC-inter-CM(Y)-ROI	L430*L485	0.00	
492	CD(Y) per intraterminal switch	E2L104C11	0.0000	
493	CD(Y)-L&UL-intraterminal	E2L104C15	0.0000	
494	CD(Y) per interterminal switch	E2L104C12	0.0000	
495	CD(Y)-L&UL-interterminal	E2L104C16	0.0000	
496	Total CD(Y) intraterminal	(L323*L492)+(L321*L493)	0.0000	
497	Total CD(Y) interterminal	(L324*L494)+(L322*L495)	0.0000	
498	VC-intra-CD(Y)-OPR	L452*L496	0.00	
499	VC-intra-CD(Y)-DRL	L454*L496	0.00	
499A	VC-intra-CD(Y)-ROI	L456*L496	0.00	
499B	VC-inter-CD(Y)-OPR	L452*L497	0.00	
499C	VC-inter-CD(Y)-DRL	L454*L497	0.00	
499D	VC-inter-CD(Y)-ROI	L456*L497	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Lake Transfer Services			
501	Lake transfer ton miles	[User]	0	
502	UC per ton mile-OPR	E1L112C1	0.0000	
503	VC-ton mile-OPR	L501*L502	0.00	
504	UC per ton mile-DRL	E1L112C2	0.0000	
505	VC-ton mile-DRL	L501*L504	0.00	
506	UC per ton mile-ROI	E1L112C3	0.0000	
507	VC-ton mile-ROI	L501*L506	0.00	
	Coal Terminals			
508	Coal terminal tons	[User]	0	
509	UC per ton-OPR	E1L113C1	0.0000	
510	VC-OPR	L508*L509	0.00	
511	UC per ton-DRL	E1L113C2	0.0000	
512	VC-DRL	L508*L511	0.00	
513	UC per ton-ROI	E1L113C3	0.0000	
514	VC-ROI	L508*L513	0.00	
	Ore Terminals			
515	Ore terminal tons	[User]	0	
516	UC per ton-OPR	E1L114C1	0.0000	
517	VC-OPR	L515*L516	0.00	
518	UC per ton-DRL	E1L114C2	0.0000	
519	VC-DRL	L515*L518	0.00	
520	UC per ton-ROI	E1L114C3	0.0000	
521	VC-ROI	L515*L520	0.00	
	Other Marine Terminals			
522	Marine terminal tons	[User]	0	
523	UC per ton-OPR	E1L115C1	0.0000	
524	VC-OPR	L522*L523	0.00	
525	UC per ton-DRL	E1L115C2	0.0000	
526	VC-DRL	L522*L525	0.00	
527	UC per ton-ROI	E1L115C3	0.0000	
528	VC-ROI	L522*L527	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Motor Vehicle Units Loaded and Unloaded			
529	MVUs handled	[User]	0.0000	
530	UC per MVU	E1L121C1	0.0000	
531	VC-MVU L&UL	L529*L530	0.00	
	Refrigerated Car Protective Service			
532	Loaded car miles	L103*L201	0	
533	UC per car mile	E1L116C1	0.0000	
534	VC-ref-protect	L532*L533	0.00	
	Loss and Damage Claim Payments			
535	Weight of shipment (tons)	L217	16,200	16,200
536	UC per ton	E1L308C1	0.0033	0.0033
537	Loss & damage claim expense (% of total miles)	*L535*L536	53.95	53.95
	TCU's Loading and Unloading (Tie and Untie)			
540	TCUs in shipment	L203	0.0000	
541	Total TCU loaded & unloaded	L540*L250	0.0000	
542	UC per TCU L&UL-OPR	E1L120C1	0.0000	
543	VC-TCU-L&UL-OPR	L541*L542	0.00	
544	UC per TCU, L/UL-DRL	E1L120C2	0.0000	
545	VC-TCU, L/UL-DRL	L541*L544	0.00	
546	UC per TCU, L/UL-ROI	E1L120C3	0.0000	
547	VC TCU, L/UL-ROI	L541*L546	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	TCU Ownership and Protective Service			
548	Line haul mileage	L103*L203*L215	0	
549	Line haul TCU days	L548/E2L207C1	0.0000	
550	Days origin/destination per TCU	E2L206C1	0.0000	
551	Total TCU days O&T	L203*L250*L550	0.0000	
552	Total TCU days	L549+L551	0.0000	
553	UC ref TCU day-OPR	E1L118C1	0.0000	
554	VC ref TCU-OPR	L552*L553	0.00	
555	UC ref TCU-DRL	E1L118C2	0.0000	
556	VC ref TCU-DRL	L552*L555	0.00	
557	UC ref TCU-ROI	E1L118C3	0.0000	
558	VC ref TCU-ROI	L552*L557	0.00	
559	UC ref TCU-protect-OPR	E1L117C1	0.0000	
560	VC ref TCU-protect-OPR	L552*L559	0.00	
561	UC TCU, nonref.-OPR	E1L119C1	0.0000	
562	VC TCU-nr-OPR	L552*L561	0.00	
563	UC TCU-nr-DRL	E1L119C2	0.0000	
564	VC TCU-nr-DRL	L552*L563	0.00	
565	UC TCU-nr-ROI	E1L119C3	0.0000	
566	VC TCU-nr-ROI	L552*L565	0.00	
	TCU Pickup and Delivery			
570	TCU's given P&D service	L203*L250	0.0000	
571	UC/TCU given P&D OPR	E1L122C1	0.0000	
572	VC-TCU P&D	L570*L571	0.00	

URCS Move Cost Program
Computation of Shipment Costs

Line	Description of Computation		BNSF Segment	Total
	Jurisdictional Add-On's			
	Single car movements			
573	Industry switching events	L305	540.0000	540.0000
574	Ind switching residual	E2L301C1	108.0431	108.0431
	Private frt car:	E2L301C2		
575	Switching add-on	L573*L574	0.00	
576	Carloads originated & terminated	L252	270.0000	270.0000
577	Station clerical resid	E2L302C1	4.9003	4.9003
	Private frt car:	E2L302C2		
578	CLOT add-on	L576*L577	0.00	
	Single & Multiple Car Movements			
579	Carloads interchanged	L308	0.0000	
580	Interchg SWT residual	E2L303C1	20.2493	20.2493
	Private frt car:	E2L303C2		
581	Interchg SWT add-on	L579*L580	0.00	
582	Freight car miles	L205	270,000	270,000
583	I&I switching residual	E2L304C1	112.1916	112.1916
	Private frt car:	E2L304C2		
584	I&I switching add-on	(L582/1000)*L583	0.00	
585	Mileage residual	E2L305C1	2.3340	2.3340
	Private frt car:	E2L305C2		
586	Car mile add-on	(L582/1000)*L585	0.00	
587	Total jurisdictional add-on	L575+L578+L581+L584+L586	0.00	

URCS Movement Costing Program
Summarization of Shipment Costs

Line	Description of Cost Element	Source Line	BNSF Costs	Total Dollars
601	Car mile-other than clerical-OPR	207	0.00	
602	Car mile-other than clerical-DRL	209	0.00	
603	Car mile-other than clerical-ROI	211	0.00	
604	Gross ton mile-OPR	221	68,485.75	68,485.75
605	Gross ton mile-DRL	223	16,293.62	16,293.62
606	Gross ton mile-ROI	225	39,979.59	39,979.59
607	Locomotive unit mile-OPR	244	51,803.12	51,803.12
608	Locomotive unit mile-DRL	246	6,334.55	6,334.55
609	Locomotive unit mile-ROI	248	3,595.61	3,595.61
610	Car mile-clerical-OPR	256	0.00	
611	CL orig & terminated-clerical-OPR	258	1,480.19	1,480.19
612	CL handled-clerical-OPR	260	0.00	
613	CL orig & terminated-other-OPR	262	0.00	
614	CL handled-other-OPR	264	127.28	127.28
615	CL handled-other-DRL	266	0.00	
616	CL handled-other-ROI	268	0.00	
617	Train miles-crew-unit train-OPR	281	18,860.53	18,860.53
618	Train miles-crew-way train-OPR	282	0.00	
619	Train miles-crew-through train-OPR	283	0.00	
620	Train miles-other-OPR	286	649.25	649.25
621	Train miles-other-DRL	288	7.17	7.17
622	Train miles-other-ROI	290	10.56	10.56
623	SEM O&T, interchange & I&I-OPR	316	3,302.99	3,302.99
624	SEM O&T, interchange & I&I-DRL	318	444.88	444.88
625	SEM O&T, interchange & I&I-ROI	320	2,638.22	2,638.22
626	SEM intraterminal-OPR	329	0.00	
627	SEM intraterminal-DRL	330	0.00	
628	SEM intraterminal-ROI	331	0.00	
629	SEM interterminal-OPR	332	0.00	
630	SEM interterminal-DRL	333	0.00	
631	SEM interterminal-ROI	334	0.00	
632	CM-private car rental	405	1,164.08	1,164.08
633	CM-railroad owned car [User]	409	0.00	
634	CM(R)-railroad owned (urcs)-OPR	411	0.00	
635	CM(R)-railroad owned (urcs)-DRL	413	0.00	
636	CM(R)-railroad owned (urcs)-ROI	415	0.00	
637	CM(Y)-railroad owned (urcs)-OPR	427	0.00	
638	CM(Y)-railroad owned (urcs)-DRL	429	0.00	
639	CM(Y)-railroad owned (urcs)-ROI	431	0.00	
640	CD-railroad owned [User]	434	0.00	
641	CD(R)-railroad owned (urcs)-OPR	438	0.00	
642	CD(R)-railroad owned (urcs)-DRL	440	0.00	
643	CD(R)-railroad owned (urcs)-ROI	442	0.00	
644	CD(Y)-railroad owned (urcs)-OPR	453	0.00	
645	CD(Y)-railroad owned (urcs)-DRL	455	0.00	
646	CD(Y)-railroad owned (urcs)-ROI	457	0.00	
647	CM(R)-accessorial-OPR	459	0.00	
648	CM(R)-accessorial-DRL	461	0.00	
649	CM(R)-accessorial-ROI	463	0.00	
650	CM(Y)-accessorial-OPR	465	0.00	

URCS Movement Costing Program
Summarization of Shipment Costs

Line	Description of Cost Element	Source Line	BNSF Costs	Total Dollars
651	CM(Y)-accessorial-DRL	467	0.00	
652	CM(Y)-accessorial-ROI	469	0.00	
653	CD(R)-accessorial-OPR	471	0.00	
654	CD(R)-accessorial-DRL	473	0.00	
655	CD(R)-accessorial-ROI	475	0.00	
656	CD(Y)-accessorial-OPR	477	0.00	
657	CD(Y)-accessorial-DRL	479	0.00	
658	CD(Y)-accessorial-ROI	481	0.00	
659	CM(Y)-intraterminal-OPR	486	0.00	
660	CM(Y)-intraterminal-DRL	487	0.00	
661	CM(Y)-intraterminal-ROI	488	0.00	
662	CM(Y)-interterminal-OPR	489	0.00	
663	CM(Y)-interterminal-DRL	490	0.00	
664	CM(Y)-interterminal-ROI	491	0.00	
665	CD(Y)-intraterminal-OPR	498	0.00	
666	CD(Y)-intraterminal-DRL	499	0.00	
667	CD(Y)-intraterminal-ROI	499A	0.00	
668	CD(Y)-interterminal-OPR	499B	0.00	
669	CD(Y)-interterminal-DRL	499C	0.00	
670	CD(Y)-interterminal-ROI	499D	0.00	
671	Ton-miles lake transfer service-OPR	503	0.00	
672	Ton-miles lake transfer service-DRL	505	0.00	
673	Ton-miles lake transfer service-ROI	507	0.00	
674	Tons at coal terminals-OPR	510	0.00	
675	Tons at coal terminals-DRL	512	0.00	
676	Tons at coal terminals-ROI	514	0.00	
677	Tons at ore terminal-OPR	517	0.00	
678	Tons at ore terminal-DRL	519	0.00	
679	Tons at ore terminal-ROI	521	0.00	
680	Tons at other marine terminals-OPR	524	0.00	
681	Tons at other marine terminals-DRL	526	0.00	
682	Tons at other marine terminals-ROI	528	0.00	
683	MVU loaded & unloaded	531	0.00	
684	Refrigerated car miles	534	0.00	
685	TCU's loaded & unloaded-OPR	543	0.00	
686	TCU's loaded & unloaded-DRL	545	0.00	
687	TCU's loaded & unloaded-ROI	547	0.00	
688	TCU protective service	560	0.00	
689	Refrigerated TCU days-OPR	554	0.00	
690	Refrigerated TCU days-DRL	556	0.00	
691	Refrigerated TCU days-ROI	558	0.00	
692	Other TCU days-OPR	562	0.00	
693	Other TCU days-DRL	564	0.00	
694	Other TCU days-ROI	566	0.00	

URCS Movement Costing Program
Summarization of Shipment Costs

Line	Description of Cost Element	Source Line	BNSF Costs	Total Dollars
695	TCU - pickup & delivery-OPR	572	0.00	
696	TOTAL VARIABLE COST LESS LOSS & DAMAGE		215,177.38	215,177.38
697	CONSTANT COST MARKUP RATIO		1.33745	
698	FULLY ALLOCATED COST LESS LOSS & DAMAGE		287,789.87	287,789.87
699	LOSS AND DAMAGE CLAIMS		53.95	53.95
700	TOTAL VARIABLE SHIPMENT COST			215,231.34
701	TOTAL FULLY ALLOCATED SHIPMENT COST			287,843.82
702	TOTAL VARIABLE COST PER HUNDREDWEIGHT			0.6643
703	TOTAL FULLY ALLOCATED COST PER HUNDREDWEIGHT			0.8884

NOTE: LINE 696 IS THE SUM OF ADJUSTED LINES 601-695, PLUS LINE 587(JURISDICTIONAL ADD-ON).
LINE 697 IS TAKEN FROM E2L220C1.
LINE 698 IS THE PRODUCT OF LINES 696 AND 697.
LINE 699 IS THE ALLOCATED LOSS AND DAMAGE COSTS FOR EACH PART OF THE MOVEMENT.
THE TOTAL IS THE AVERAGE FOR ALL PARTS OF THE MOVEMENT.
LINE 700 IS THE TOTAL VARIABLE COST FOR ALL CARRIERS OR REGIONS OF THE TOTAL
ADJUSTED COSTS SUMMATION OF LINES 696 AND 699.
LINE 701 IS THE TOTAL FULLY ALLOCATED COST FOR ALL CARRIERS OR REGIONS OF THE
TOTAL ADJUSTED COSTS SUMMATION OF LINES 698 AND 699.
LINE 702 EQUALS L700/(20 * NUMBER OF CARS * TONS PER CAR).
LINE 703 EQUALS L701/(20 * NUMBER OF CARS * TONS PER CAR).
LINE 704 (R/VC RATIO) NOT CALCULATED BECAUASE NO FREIGHT CHARGE ENTERED.

NOTE: VALUES IN THE COLUMNS LABELED COST ARE NOT ADJUSTED
BY THE UPDATE INDEX. ONLY THE TOTAL COLUMN CONTAINS
ADJUSTED VALUES FOR LINES 601 THRU 695 AND LINE 699.